

第12回知的財産翻訳検定<第7回和文英訳>1級/機械【標準解答】

問1

1. A board warpage analyzing method for a board warpage analyzing system which analyzes warping of multi-layer structured boards layered in a first direction, said method comprising the steps of:

dividing said board into a plurality of divided parts by way of a dividing unit, in the event that there exist a first material layer and a second material layer of different physical properties within a layer extending in a second direction intersecting said first direction, by virtually cutting, in said first direction, model data representing the form of said board at the boundary portion between said first material layer and second material layer;

calculating the warpage of each divided part in accordance with the Multilayered Beam Theory by way of a computing unit, and virtually deforming each part in accordance with this warpage; and

virtually joining said deformed divided parts by way of a joining conversion unit to form a board, and calculating the warpage of said board in its entirety based on the warpage of each of said divided parts.

2. The board warpage analyzing method according to Claim 1, wherein, in the event that the height of the first material layer which is the length in said first direction is not all the same, said dividing unit virtually cuts model data representing the form of said board in said second direction, so as to be divided into a plurality of said divided parts.

問2

Description of the Related Art

[0002] In known vehicles, air spoilers are attached to trunk lids or rear hatches at the rear ends thereof to stabilize the vehicle body and reduce fuel consumption by smoothing the airflow around the vehicle body while the vehicle is traveling (see, for example, Japanese Unexamined Utility Model Registration Application Publication No. 58-30578).

[0003] The air spoilers are attached to the exterior of the vehicle body at conspicuous locations, and this significantly degrades the appearance of the automobile. In addition, since a rear skirt provided at the rear of the vehicle body is curved from the bottom surface to the rear end of the vehicle body, the air that has flowed under the vehicle body flows toward the upper area behind the vehicle body and joins the air that has flowed along the roof and the air spoiler toward the area behind the vehicle body at a relatively high position. This generates turbulence in substantially the entire area behind the rear surface of the vehicle

body from the rear window to the rear skirt, which area is surrounded by the airflow from above the roof and the airflow from under the vehicle body. As a result, the rear surface of the vehicle body collects dirt more readily than the other surfaces, and is very easily soiled.

問3

[0014] The stage 7 is rotated around a shaft 8b by a motor 8a provided in a base 8 and is moved together with the shaft 8b in the vertical direction Z by a transmission mechanism 8b that converts the rotation of another motor 8c provided in the base 8 into a vertical reciprocal movement. A controller 9 drives the motors 7a, 8a, and 8c while monitoring control signals thereof, thereby controlling the suction hand 4 such that the suction hand 4 moves to a desired position.

[0015] Vacuum chucks 24 provided on the top surface of a hand body 14 are operated so as to secure the glass substrate 5 to the hand body 14. Thus, the glass substrate 5 is prevented from falling or being displaced during the movement, such as rotation, of the suction hand 4. A slide stopper 84 having projections 84a made of resin is provided at an end of the hand body 14. When the suction hand 4 is moved into a carrier cassette 6 and then retracted, the slide stopper 84 engages with the back edge of the glass substrate 5 on the suction hand 4, so that the glass substrate 5 is reliably pulled out of the carrier cassette 6.